Congress Programme

Sunday 10.9.2023

10:00 - 18:30 **REGISTRATION** /Foyer Hotel Bellevue/Accommodation of

participants - 14:00

16:30 - 16:50 OPENING CEREMONY (Congress Hall Grand Bellevue)

Welcome (Ján Turňa – president of SSBMB, Libor Grubhoffer

president of ČSBMB)

Presentation of commemorative SSBMB medals

Award ceremony of Josef V. Koštíř for significant scientific contribution in the field of biochemistry and cellular and

molecular biology

Ján Turňa (Department of Molecular Biolology, Comenius University, Bratislava): 50 years of recombinant DNA - past, presence and future.

17:00 - 18:00 Plenary Lecture (Congress Hall Grand Bellevue)

Andrea Fleig (Biomedical Research at The Queen's Medical Center Honolulu County, Hawaii, USA): Cannabinoids as Modulators of Calcium Signaling and Inflammation.

19:00 - 21:00 Welcome Reception

Monday 11.9.2023

8:00 -18.30 REGISTRATION /Foyer Hotel Bellevue/

9:00 - 9:50 Plenary Lecture (Bellevue I):

Ulrike Stein (Experimental and Clinical Research Center, Charité - Universitätsmedizin Berlin and. Max-Delbrück Center for Molecular Medicine): **Restrict cancer metastasis** - **save patient life: Translating gene discovery into clinical application.**

10:00 -11:30 Lectures in parallel Sections

Molecular basis of disease and therapy (Bellevue I)

Martin Kolísek - chair

(Comenius University in Bratislava, Jessenius Faculty of Medicine)

Silvia Pastoreková – chair

(Biomedical Center SAS, Bratislava)

Šárka Pospíšilová (Medical faculty, Masaryk University, Brno): Molecular genetic changes in lymphoid malignancies and their impact on the pathogenesis, prognosis and molecular evolution of the disease (ČSBMB J.V.Koštíř prize talk).
10:30 - 10:50
Šárka Pospíšilová (Medical faculty, Masaryk University, Freie

10:30 - 10:50

Jörg Aschenbach (Institute of Veterinary Biochemistry, Freie Universitaet Berlin, Germany): Role of magnesium in energy and calcium homeostasis of dairy cows - translations to humans. - invited speaker

10:50 - 11:10 Ralf Einspanier (Institute of Veterinary Biochemistry, Freie Universitaet Berlin, Germany): Holistic analysis of gene expression (NGS, proteomics) and functions in animal diseases: Canine cancer and varroa treatment in honeybees as examples. - invited speaker

11:10 - 11:30 Jürgen Vormann (Institute of Veterinary Biochemistry, Freie Universitaet Berlin, Germany): Magnesium and acid-base balance in aging. - invited speaker

Cancer Cell Signaling, Regulations & Xenobiochemistry (Bellevue II)

Albert Breier - chair

(Centre of Biosciences SAS, Bratislava)

Miroslav Machala - chair

(Veterinary Research Institute, Brno)

10:00 - 10:30	Miroslav	Machala	(Veterinary	Research	Institute,	Brno):
	Novel as	pects of Be	nzo[a]pyrene	es toxicity.		

10:30 - 10:55

Angéla Békési (Institute of Enzymology, Research Centre for Natural Sciences, Hungarian Academy of Sciences, Budapest):
Cell responses upon thymidylate synthase inhibitory treatments differ in multiple molecular and phenotypic aspects.

10:55 - 11:20

Jakub Styk (Institute of Medical Biology, Genetics and Clinical Genetics, Faculty of Medicine, Comenius University):

Unveiling The Potential Of Liquid Biopsy: Non-Invasive Cancer Screening For Early Detection And Preventive, Predictive And Personalized Medicine.

11:30 -12:00 Coffee Break

12.00 - 13.00 Lectures in parallel Sections

Molecular basis of disease and therapy (Bellevue I)

Martin Kolísek - chair

(Comenius University in Bratislava, Jessenius Faculty of Medicine)

Silvia Pastoreková – chair

(Biomedical Center SAS, Bratislava)

12:00 - 12:20	Martin Kolísek (Comenius University in Bratislava lessenius Faculty of Medicine): Identification of multivariate mitochondrial fitness algorithm in diagnostics of Parkinson's disease.
12:20 - 12:40	Petra Hnilicová (Comenius University in Bratislava Jessenius Faculty of Medicine): On the interface betweer muscle wasting and central neurodegeneration.
12:40 - 13:00	Zuzana Tatarková (Comenius University in Bratislava Jessenius Faculty of Medicine): Aging and the role of MAM:

in the protection of the postischemic heart.

Cancer Cell Signaling, Regulations & Xenobiochemistry (Bellevue II)

Albert Breier - chair

(Centre of Biosciences SAS, Bratislava)

Miroslav Machala - chair

(Veterinary Research Institute, Brno)

- 12:00 12:20 Ewelina Zarakowska (Collegium Medicum Bydgoszcz, Nicolaus Copernicus University Toruń, Poland): Impact of vitamin C supplementation on the epigenetic modifications in DNA and mRNA expression of vitamin C transporter genes in chronic lymphocytic leukemia.
- 12:20 12:40 Veronika Huntošová (Faculty of Science, P. J Safarik University in Košice): Autophagy and apoptosis switching during photo-activation of cancer cells.
- 12:40 -13:00 Albert Breier (Faculty of Chemical and Food Technology Slovak University of Technology in Bratislava): Interplay between P-glycoprotein mediated drug resistance and the LPHN1/GAL-9/TIM-3 signaling pathway.
- 13.00 14.30 Lunch
- 14:30 -16:00 Lectures in parallel Sections

Recombinant protein production (Kristal Lounge)

Stanislav Stuchlík – chair

(Dept Mol Biol, Faculty of Natural Sciences, Comenius University in Bratislava)

Michaela Wimmerová – chair

(National Centre for Biomolecular Research, Faculty of Science, Masaryk University, Brno)

- 14:30 15:00 Martin Toul (Loschmidt Laboratories, Dept. of Exp. Biology, Faculty of Science, Masaryk University, Brno, 2. RECETOX, Faculty of Science, Masaryk University, 3. International Clinical Research Center, St. Anne's University Hospital Brno):

 Rational protein engineering driven by kinetics. (ČSBMB J.V.Koštíř prize talk)
- 15:00 15:20 Ileana C. Farcasanu (University of Bucharest, Faculty of Chemistry, Romania): Hexatriacontahexapeptides designed as metal-binding Tags.
- 15:20 15:40 Veronika Hovanová (Center for Interdisciplinary Biosciences, Technology and Innovation Park, P.J. Šafárik University, Košice, Department of Biophysics, Faculty of Science, P.J. Šafárik University, Košice, Department of Biomaterials, Faculty of Engineering Science, Universität Bayreuth,

Department of Biochemisty, Faculty of Science, P.J. Šafárik University, Košice): **Modulating the properties of recombinant spider silk protein eADF4(C16) hydrogels.**

15:40 - 16:00

L'ubica Kormanová (Department of Molecular Biology., Faculty of Natural Sciences, Comenius University in Bratislava): *Vibrio natriegens*: A promising expression host for the production of "difficult-to-express" recombinant proteins.

Postranslational Modifications, Glycobiochemistry (Silver Lounge)

Ján Tkáč - chair

(Institute of Chemistry SAS, Bratislava)

14:30 - 15:55	Michaela Wimmerová (National Centre for Biomolecular
	Research, Faculty of Science, Masaryk University, Brno):
	Protein glycosylation: synthesis, significance in health
	and disease, and its specific detection by lectins.
14:55 - 15:15	Tereza Buráňová (Masaryk University, Brno): Novel two-
	domain lectin from bacterium Photorhabdus laumondii
15:15 - 15:35	Filip Melicher (Masaryk University, Brno): Production and
	crystallization of lectin from Photophabdus laumondii.
15:35 - 16:00	Ján Tkáč (Institute of Chemistry SAS, Bratislava): Disease
	diagnostics by analysis of glycans.

16:00 -16:30 Coffee Break

16:30 -17:30 Lectures in parallel Sections

Recombinant protein production (Kristal Lounge)

Stanislav Stuchlík - chair

(Department of Molecular Biology, Faculty of Natural Sciences, Comenius University in Bratislava)

Michaela Wimmerová - chair

(National Centre for Biomolecular Research, Faculty of Science, Masaryk University, Brno)

- 16:30 16:50 Eva Struhárňanská (Department of Molecular Biology, Faculty of Natural Sciences, Comenius University in Bratislava): Production of recombinant peroxidases, their characterization and potential use.
 16:50 17:10 Marek Korsák (Central European Institute of Technology, Masaryk University, National Centre for Biomolecular Research, Faculty of Science, Masaryk University): Production of recombinant lectin PluLec from Photorhabdus
- 17:10 17:30 Carlos Díaz (Center for Interdisciplinary Biosciences Technology and Innovation Park, University of Pavol Jozef Šafárik in Košice, Department of Biophysics, Faculty of Science, University of Pavol Jozef Šafárik in Košice): Purification of selected haloalkane dehalogenase evolved by ribosome display.

functional characterization.

luminescens for neutron crystallography and its structure-

Zoltan Lipinszki (Institute of Biochemistry, Biological Research Centre, Szeged, Hungary):
 Challenges of producing recombinant viral antigens suitable for post-vaccination antibody testing

Postranslational Modifications, Glycobiochemistry (Silver Lounge)

Ján Tkáč - chair

(Institute of Chemistry SAS, Bratislava)

16:30 - 16:50	Veronika Vráblová (Institute of Chemistry SAS, Bratislava): Magnetic particles in bioaffinity interactions for implementation in the diagnostics of oncological diseases based on glycans.
16:50 - 17:10	Adam Paulin Urminský (Research Centre for Applied
	Molecular Oncology, Masaryk Memorial Cancer Institute,
	Brno, National Centre for Biomolecular Research, Faculty of
	Science, Masaryk University, Brno, Department of
	Comprehensive Cancer Care, Masaryk Memorial Cancer
	Institute, Brno): Paclitaxel-induced neuropathy: biomarker
	insights from glycoproteomics.
17:10 - 17:30	Michaela Mikysková (Masaryk University, Brno): Structural
	characterization of the jacalin-related lectin from the
	mushroom <i>Calocera viscosa</i>
17:30 - 17:50	Drobnicov Memmorial 2023 - prize talk

POSTER Session – 10.9-13.9.2023

18:00 - 19:00 Poster discussion (The organizing committee will award three best posters at the FEBS3+ congress closing ceremony and special poster award will be selected by company Sipoch)

The poster boards will be available for the entire time of the duration of the congress and will be located in the foyer of the Bellevue hotel.

Social event

Gala dinner 19:30 – 22:00

Tuesday, 12.9.2023

8:00 -18.30 **REGISTRATION /Foyer Hotel Bellevue/**

9:00 -9.50 Plenary Lecture (Bellevue I)

Marshall Bloom (National Institute of Alergy and Infection Diseases, USA): New dimensions in the study of thick-borne virus infections.

10:00 -11:30 Lectures in parallel Sections

Viruses, Bacteria, Protozoa & Parasites (Bellevue I)

<u>Anton Horváth</u> – chair

(Department of Biochemistry, Faculty of Natural Sciences, Comenius University in Bratislava)

Libor Grubhoffer – chair

(Biology Centre CAS, České Budějovice)

10:00 - 10:30	Vyacheslav Yurchenko (University of Ostrava, Life Science
	Research Centre, Ostrava): Catalase is detrimental for
	Leishmania virulence (with notes on evolution of catalases
	in <i>Trypanosomatidae</i>).
10:30 - 10:45	Ľubomíra Chmelová (University of Ostrava, Life Science

- Research Centre, Ostrava): Isocitrate dehydrogenases of trypanosomatids.
- 10:45 11:00 Ingrid Sveráková (Faculty of Natural Sciences, Comenius University, Bratislava; Institute of Parasitology, Biology Centre, Czech Academy of Sciences, České Budějovice; Life Science Research Centre, Faculty of Science, University of Ostrava): An unusual composition of mitochondrial pyruvate dehydrogenase complex of diplonemids, widespread marine protists.
- 11:00 11:15 Barbora Bučková (Faculty of Natural Sciences, Comenius University, Bratislava): Bioenergetics of marine protist Paradiplonema papillatum.
- **11:15 11:30 Gabriel Demo** (Central European Institute of Technology, Masaryk University, Brno; Department of Biology, Niigata University, Niigata, Japan): **Ribosome hibernation in** *Archea.*

Proteomics (Bellevue II)

Peter Baráth- chair

(Institute of Chemistry SAS, Bratislava)

<u>Jiří Dresler</u> - chair

(Military Health Agency, Ministry of the Interior of the Czech Republic, Prague)

10:00 – 10:30	Vladimír Havlíček (Institute of Microbiology of the Czech Academy of Sciences, Prague): Infectious site molecular mapping
10:30 – 10:45	Adam Pap (Single Cell Omics Advanced Core Facility, Hungarian Centre of Excellence for Molecular Medicine, Laboratory of Proteomics Research, Biological Research Centre, Eotvos Lorand Research Network (ELKH) Szeged, Hungary): Mass spectrometric characterization of Oglycopeptides.
10:45 – 11:00	Marek Šebela (Department of Biochemistry, Faculty of
	Science, Palacký University, Olomouc): Enzyme activity
	assays by MALDI-TOF mass spectrometry.
11:00 – 11:15	Zuzana Kalaninová (Faculty of Science, Charles University, Prague, BioCeV - Institute of Microbiology of the Czech Academy of Sciences, Vestec): Proline semi-specific enzymes in the spotlight: The role of AnPEP in structural proteomics.
11:15 – 11:30	Maksym Danchenko (Institute of Plant Genetics and
	Biotechnology - Plant Science and Biodiversity Centre, Institute of Chemistry, Slovak Academy of Sciences, Institute of Hydrobiology of National Academy of Sciences of Ukraine): How do aquatic plants cope with pathogens in Chernobyl

11:30 -12:00 Coffee Break

environment?

12:00 -13:00 Lectures in parallel Sections

Viruses, Bacteria, Protozoa & Parasites (Bellevue I)

Anton Horváth – chair

(Department of Biochemistry, Faculty of Natural Sciences, Comenius University in Bratislava)

Libor Grubhoffer – chair

(Institute of Parasitology, Biology Centre CAS, České Budějovice)

12:00 - 12:15 Hana Drahovská (Department of Molecular Biology, Faculty of Natural Sciences, Comenius University in Bratislava): Characterization of bacteriophages infecting *E. coli* and Cronobacter. 12:15 - 12:30 Monika Záhorszká (Department of Biochemistry, Faculty of Natural Sciences, Comenius University in Bratislava): Pretomanid and delamanid as the newest players against tuberculosis. 12:30 - 12:45Stanislav Huszár (Department of Biochemistry, Faculty of Natural Sciences, Comenius University in Bratislava): Investigating the requirement of the CydDC transporter for the cytochrome BD oxidase activity in Mycobacterium tuberculosis. 12:45 - 13:00 **Dušan Žitňan** (Institute of Zoology, SAS, Bratislava, Slovakia): Expression and function of specific neuropeptide-receptor pathways in ticks.

Companies' presentations (Silver Lounge)

12:00 - 12:20

Balint Nagy (Editor-in-Chief of journal MCP, Elsevier) and Viorica Liebe Lastun (Scientific Editor at Elsevier LTD): How to successfully publish in MCP—Advancing Biology and Medicine through Omics and Bioinformatic (Elsevier prize for four best lectures by young scientists in sections: Molecular Basis of Disease and Therapy; Regulation of Gene Expression, Epigenetics; Biotechnology And Technology Transfer In Life

12:20 - 12:40 Kateřina Kolková (SPECION, s.r.o): Modern Methods for Life Science Applications

Sciences; DNA Sequencing – Methods and Applications).

13.00 -14.30 Lunch

14:30 -16:00 Lectures in parallel Sections

Biotechnology and Technology Transfer in Life Sciences (Kristal Lounge)

<u>Pavol Miškovský -</u> chair

(Cassovia New Industry Cluster, Košice)

Erik Sedlák - chair

(Technology and Innovation Park of the P.J. Šafárik University in Košice)

14:30 - 15:00	Pavol Miškovský (Cassovia New Industry Cluster, Košice):
	Application of nanotechnology-based sensors in
	environment, medicine and food control.
15:00 - 15:15	Martin Humenik (Department of Biomaterials, Faculty of
	Engineering Science, University Bayreuth, Bayreuth):
	Recombinant spider silk-DNA hybrids in materials
	engineering.
15:15 - 15:30	Ondrej Pös (Comenius University Science Park, Bratislava,
	Slovakia; Geneton Ltd., Bratislava): The potential of liquid
	biopsy in the era of precision medicine.
15:30 - 15:45	Erik Sedlák (Center for Interdisciplinary Biosciences,
	Technology and Innovation Park, P.J. Šafárik University
	Košice, Department of Biochemisty, Faculty of Science, P.J.
	Šafárik University): Alternative design of flavoprotein-based
	photosensitizers.
15:45 - 16:00	Ruta Lavinia Liliana (University of Bucharest, Faculty of
	Chemistry): Yeast surface display platform for the selection
	of GFP and mCherry nanobodies.

Regulation of Gene Expression, Epigenetics (Bellevue II)

Andrea Šoltýsová - chair

(Department of Molecular Biology, Faculty of Natural Sciences, Comenius University in Bratislava)

<u>Lucia Messingerová</u> - chair

(Centre of Biosciences SAS)

14:30 - 15:00	Aladar Pettko-Szandtner (Laboratory of Proteomics Research, Biological Research Centre, Szeged, Institute of Plant Biology, Biological Research Centre, Szeged, Single Cell Omics Advanced Core Facility, Hungarian Centre of Excellence for Molecular Medicine, Szeged): Proteomic stories/Determining the phosphorylation map of plant retinoblastoma-related (RBR) protein in proliferating tissues.
15:00 - 15:20	Jiří Vrba (Department of Medical Chemistry and Biochemistry, Faculty of Medicine and Dentistry, Palacký University, Olomouc): <i>In vitro</i> systems for investigating metabolic sulfation of natural polyphenols.
15:20 - 15:40	Agnes Tantos (Research Centre for Natural Sciences, Budapest): Regulatory roles of RNA binding in histone methyltransferases.
15:40 - 16:00	Andrea Šoltýsová (Department of Molecular Biology, Faculty of Natural Sciences, Comenius University in Bratislava): Epigenetic landscape in prognosis of uveal melanoma.
16:00 -16:30	Coffee Break

Biological membranes (Kristal Lounge)

Peter Račay - chair

16:30 -17:30

(Department of Medical Biochemistry, Jessenius Faculty of Medicine, Comenius University in Bratislava)

Lucia Balážová - chair

(BMC SAS, Bratislava, Institute of Food, Nutrition and Health, ETH Zurich)

Lectures in parallel Sections

16:30 – 17:15 Christos Chinopoulos (Department of Medical Biochemistry, Semmelweis University, Budapest, Hungary): Non-oxidative phosphorylation energy-harnessing pathways in respiration-impaired mitochondria. - invited speaker

- 17:15 17:35 Lucia Balážová (BMC SAS, Bratislava, Institute of Food, Nutrition and Health, ETH Zurich): Targeting GPR180 modulates glucose homeostasis by enhancing energy expenditure and insuline secretion.
- 17:35–17:55 Peter Račay (Comenius University in Bratislava, Jessenius Faculty of Medicine): To be under stress, or not to be under stress, that is the question.

DNA sequencing – methods and applications/Bioinformatics (Computational Biochemistry (Bellevue II)

Tomáš Szemes - chair

(Department of Molecular Biology, Faculty of Natural Sciences, Science Park, Comenius University in Bratislava)

Jaroslav Budiš - chair

(Science Park, Comenius University in Bratislava)

16:30 – 17:00	Bálint Nagy (University of Debrecen, Faculty of Medicine,
	Department of Human Genetics, Hungary): Clinical
	application of cell-free nucleic acids invited speaker
17:00 – 17:30	Vladimír Beneš (EMBL Heidelberg): My forty DNA sequencing years.
17:30 – 17:45	Tomáš Szemes (Department of Molecular Biology, Faculty of
17.30 - 17.43	· · ·
	Natural Sciences, Science Park, Comenius University in
	Bratislava): Narcos and Beyond: National Surveillance
	of SARS-CoV-2 and Other Pathogens.
17:45 – 18:00	Ľubica Urbániková (Institute of Molecular Biology, SAS):
	Family GH13 trehalose synthases with a C-terminal maltokinase – an <i>in silico</i> study.
18:00 – 18:15	Matej Hrnčiar (Geneton s.r.o): Identifying Microsatellite
	Instability through Analysis of Sequencing Data
18:15 – 18:35	Mariana Šatrová, Ondřej Pácalt (GeneTiCA, s.r.o.): Squeeze
	the genome with long reads
18:35 – 18:55	Dmytro Omelchenko (application specialist at Dynex, s.r.o.):
	Sequencing by avidity: unprecedented data quality at affordable price.

Social event

19.30 - wine tasting

Wednesday 13.9. 2023

FEBS special Session on Research and Career skils (Bellevue I)

09:00 – 09:30 Václav Pačes (Institute of Molecular Genetics, Czech Academy of Science, Praha):

Teaching in Biochemistry, Biological Chemistry and Molecular Biology study programs (Bellevue I)

09:30 - 10:30

Mária Mareková - chair

(Medical University, Pavol Jozef Šafárik University in Košice)

Ján Lehotský - chair

(Department of Medical Biochemistry, Jessenius Faculty of Medicine, Comenius University in Bratislava)

09:30 – 09:40	Mária Kožurková (Department of Biochemistry, Institute of Chemical Sciences, Faculty of Science, Pavol Jozef Šafárik University in Košice): Post-graduate study program in Biochemistry at the Faculty of Sciences of Pavol Jozef Šafárik Univ in Košice.
09:40 - 09:50	Maria Mareková (Department of Medical and Clinical Biochemistry, Faculty of Medicine, Pavol Jozef Šafárik University in Košice): How is changing role of chemical subjects in medical study curriculum last decade?
09:50 - 10:00	Boris Lakatoš (Institute of Biochemistry and Microbiology, Faculty of Chemical and Food Technology, Slovak University of Technology, Bratislava): Teaching of biochemistry at FCHPT STU – impact of new accreditation, COVID-19 and the project "ACCORD".
10:00 - 10:10	Stanislav Stuchlík (Dept Mol Biol, Faculty of Natural Sciences, Comenius University in Bratislava): Bioscience study programs at the Faculty of Natural Sciences CU and Department of Molecular Biology.
10:10 – 10:20	Jiří Hudeček (Department of Biochemistry, Faculty of Science, Charles University, Prague): FEBS Educational Ambassadors

10:30 - 11:00 Coffee Break

Workshop: Women in science (Gold Lounge)

Zuzana Staňáková - chair

(Slovak Centre of Scientific and Technical Information, Bratislava)

Jana Kottulová - chair

(Faculty of Arts, Comenius University, Bratislava)

11:00 - 11:20	Zuzana Staňáková (Slovak Centre of Scientific and Technical
	Information, Bratislava): Inclusive Gender Equality in the Life
	Sciences. Importance of Using the Full Pool of Talents in
	Biochemistry.

- 11:20 11:40 Jana Kottulová (Faculty of Arts, Comenius University, Bratislava): Why should we care about gender equality in science?
- 11:40 12:00 Danica Zendulková (Slovak Centre of Scientific and Technical Information, Bratislava): Women in Slovak Life Sciences Projects.

12:00 Closing ceremony (Bellevue I):

- Poster prize winners announcement
- Elsevier prize winners announcement
- Lecture prize winners announcement (Information about BIOTECH, IAB, GeneTICA - prize for three best lectures by young scientists in three sections: Recombinant Protein Production; DNA Sequencing – Methods and Applications; Proteomics)